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AUTHOR Prather, James E.; Sturgeon, Joseph S.
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ABSTRACT

The performance of students who persisted or withdrew from courses was compared in a survey of all undergraduate students enrolled at Georgia State University during the spring 1981 quarter. Multivariate analysis was applied to three aspects of withdrawal and performance: course grades, the length of time withdrawing students stayed in the course, and characteristics of course persisters and dropouts. It was found that past grade point average (GPA), course contextual variables such as the overall ability of the class, and the discipline of the course were the most significant factors affecting withdrawal and academic performance. Students with higher GPAs withdrew less, made better grades, but also seemed to use withdrawal as a mechanism to maintain academic status. That is, many students used withdrawal to avoid making a grade less than one that they expected. Classes where students with high ability predominated had lower grades than classes with students of mixed ability. Disciplines such as finance, information systems, and mathematics generated more withdrawals. In general, these factors had a similar impact across lines of race and gender. (Author/SW)

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THE INFLUENCE OF ACADEMIC PERFORMANCE, DEMOGRAPHIC BACKGROUND AND DISCIPLINE ON COLLEGE GRADES AND COURSE WITHDRAWALS

Institutional Research Report No. 82-2

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by

James E. Prather
Office of Institutional Planning

and

Joseph S. Sturgeon
Office of the Registrar

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Georgia State University
Office of Institutional Planning
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Abstract

This study has investigated course withdrawals and grades for undergraduate classwork. Some of the diverse factors that impinge upon course performance and course withdrawals are studied. The diversity of these factors reflects the diversity of the modern urban university. Course withdrawal is viewed as a possible way for students to cope with their college experience. The W is an alternative to the traditional A - F grades for students. Using all undergraduate students for spring quarter 1981, multivariate analyses were done upon grades and class withdrawals. The predictor variables include academic performance, demographic background, course contextual effects, and course type.

The study found that past academic performance (GPA), course contextual variables such as the overall ability of the class, and the discipline of the course are the most significant factors affecting withdrawal and academic performance. Students with higher GPA's withdraw less, make better grades, but may also use withdrawal as a mechanism to maintain academic status. Classes where students with higher ability predominate have lower grades than classes with students of mixed ability. Disciplines such as finance, information systems and mathematics generate more withdrawals. In general, these factors have a similar impact across lines of race and gender.

Table of Contents

	Page
Introduction	1
Review of the Literature	1
Data Source	2
Methods	3
Discriminant Analysis	3
Multiple Regression	3
Findings	4
Discriminant Analysis	4
Multiple Regression Analysis	7
Withdrawals	7
GPA	7
Course Context	7
Course Type	9
Demographic Variables	9
Grades	9
GPA	9
Course Context	9
Course Type	9
Demographic Variables	9
Days in Course Before Withdrawal	11
Summary	11
Implications	14
References	16
Footnotes	17
Appendix	18

List of Tables

Table 1	Classification Tables from Multiple Discriminant Analysis of Course Grades Using Academic Status, Demographic Background, Contextual Factors, and Course Types, Spring Quarter 1981	5
Table 2	Multiple Regression Coefficients for Course Grades and Class Withdrawal Status, Spring Quarter 1981	8
Table 3	Multiple Regression Coefficients for Days in Courses Before Withdrawal, Using Academic Status, Demographic Background, Contextual Factors, and Course Types	12

THE INFLUENCE OF ACADEMIC PERFORMANCE, DEMOGRAPHIC BACKGROUND AND DISCIPLINE ON COLLEGE GRADES AND COURSE WITHDRAWALS

Student retention in college courses is closely related to student performance. Research has shown that poor performance in college is indicative of both slow progress over time towards a degree and of withdrawing from a college course during the quarter. Course retention is a major problem because withdrawals involve substantial extra expenses, such as holding extra places in a classroom, and processing additional paperwork. Thus student retention is important in the administration and planning of an institution of higher education.

Student bodies in many traditional institutions are evolving towards the type of student body found at Georgia State University--one with a high level of part-time enrollments, a fluid student body, and frequent "stop out, drop in" student attendance patterns. These characteristics make it difficult to analyze student performance. This study, meant to serve as input to planning, will extend previous studies about students. Other studies have covered beginning freshman performance, student demographics, degrees granted, reasons why students withdraw from college courses, and persistence in degree programs over time. Specifically, this study will compare the performance of undergraduate students who withdraw from courses with those who did not, focusing primarily upon student performance and demographic background.[1]

Review of the Literature

Previous studies have shown students with lower grade point averages (GPA) tend to drop more courses (Feather, 1966; Feather & Saville, 1967; and Bandura, 1977). The findings are the starting point in building an empirical model

of withdrawals. Past research has shown that while students with lower GPA's tend to drop courses, they also tend to stay in a course longer before dropping. Further, it has been found that students persist longer in less difficult courses (Rownd, Bolton, & Marr, 1981). As measured by GPA's, better students tend to withdraw sooner from a course than do poorer students. It has been speculated that this is due to the expectation of those students accustomed to high levels of success to drop a course immediately upon perceiving a lesser chance of success. On the other hand, the poorer students might be seeking alternatives to withdrawing because they have not yet found a successful way to cope with their college work (Rownd, Bolton, & Marr, 1981).

A survey of why students withdraw from college courses found three main factors: performance, motivation, and impressions of the instructor (Reed, 1981). Reed suggests that the likelihood of a student remaining in a college course be viewed as a function of (1) the student's confidence in satisfactorily coping with the course material; (2) perceptions of the relevance of the given course for the student's needs; and (3) the student's impressions of how helpful and reliable the instructor appears to be.

Data Source

All data for this study are from the Registrar's student record file, and include all undergraduate students enrolled spring quarter 1981. The data base gives the type of course the student took, certain personal attributes such as sex, age, race, foreign student status, and whether receiving financial aid or veterans' benefits. Academic performance is measured by GPA, rate of attendance over time, quarter credit hours earned, and entrance status--native or transfer. Additionally, a group of contextual variables is

incorporated into the analysis. These variables measure the classroom course context for a given student: (1) the average grade in that given class; (2) the average GPA of the students in the given class; (3) the number of students in the class; and (4) whether the class is upper or lower division.

Methods

The study uses multivariate methods in controlling the large number of variables considered. Multivariate methods statistically account for factors such as academic performance, course context and personal characteristics, which may influence course withdrawal or course grades. The multivariate analysis was applied to three aspects of withdrawal and performance: (1) the grades students made in their courses; (2) a comparison between students who withdrew from courses with those who did not; (3) for those students who withdrew, how long they remained in the course. Both multiple regression and discriminant analysis are employed.

Discriminant Analysis

The multiple discriminant analysis permits a comparison of the student's actual grade with the predicted grade. The predicted grade is based upon optimal combinations of academic performance, demographic background, context of the course, and the course type. The dependent variable for the discriminant analysis is the actual grade the student received (A - F, or W). This permits an incisive comparison to be made between students who withdrew and students who received grades. (See the Appendix for additional technical details on discriminant analysis.)

Multiple Regression

The multiple regression equations are used to see the specific impact of each variable upon student withdrawal. The regression coefficients

indicate the importance of a given variable. A dichotomous dependent variable is used as an indicator of withdrawal (1 = withdrawal; 0 = completing the course). Next, using grade as the dependent variable, a similar analysis was performed for those students who did not withdraw. A third analysis was done for those students who did withdraw, using the number of days in the course as the dependent variable.

Separate analyses are performed on the interaction of race and gender groups. Previous research has shown that the interaction effect, rather than the individual effect of gender and race, is more important to focus upon (see Prather & Smith, 1975, Research Report No. 76-1). The groups are black female (BF), black male (BM), white female (WF), and white male (WM). These intereaction groups are included to test for the differential performance within groups.

Findings

Discriminant Analysis

The results of the discriminant analysis are presented in Table 1. The percent correctly classified is given at the bottom of the table. Forty-seven percent of the entire population were members of the groups in which they were predicted to fall by the discriminant equation. Seventy-three percent of the students who made A's were predicted to be A-type students, while only 4% of the students who made A's were predicted to be W-type students. Of those students who made F's, 56% were predicted to make F's while 14% were predicted to make W's. This suggests that it is easier to determine who will make A's based on the independent variables than it is to determine who will make F's. Further, it is harder to predict who will get an F or W than who will receive an A or W. That is, more students who make F's are

Table 1

Classification Tables From Multiple Discriminant Analysis of Course Grades Using Academic Status, Demographic Background, Contextual Factors, and Course Types

(Expressed in Percentages)
Spring Quarter 1981

Group	Actual Grade	Predicted Grade A	B	C	D	F	W		Number
BF	A	[74]	20	3	1	0	3		322
	B	24	[45]	15	6	1	9		814
	C	3	24	[34]	15	7	17		1079
	D	1	4	16	[40]	17	22		319
	F	2	3	7	18	[57]	14		311
	W	8	14	13	8	25	[32]		383
	Other	8	6	23	3	49	12		282
	Total Percent Classified Correctly							43	
BM	A	[72]	19	3	2	0	5		148
	B	23	[45]	18	3	2	10		355
	C	4	21	[37]	16	8	14		519
	D	1	4	14	[40]	25	16		167
	F	0	3	9	15	[57]	16		237
	W	9	8	8	9	22	[43]		249
	Other	7	2	25	1	56	9		167
	Total Percent Classified Correctly							46	
WF	A	[73]	19	2	1	0	5		3694
	B	23	[42]	13	4	1	16		3479
	C	3	19	[31]	19	10	18		1866
	D	1	5	17	[46]	22	9		395
	F	2	2	9	18	[60]	8		333
	W	22	13	9	11	18	[27]		950
	Other	18	9	5	4	54	10		317
	Total Percent Classified Correctly							50	
WM	A	[71]	19	3	1	1	5		2083
	B	26	[40]	13	6	1	13		2972
	C	5	19	[29]	21	8	18		2265
	D	1	5	19	[43]	20	12		467
	F	1	2	6	21	[51]	19		604
	W	17	13	7	9	23	[31]		1176
	Other	12	10	2	2	64	10		338
	Total Percent Classified Correctly							44	
Total	A	[73]	20	3	1	0	4		6640
	B	25	[44]	14	4	1	13		8129
	C	4	21	[31]	18	9	18		6107
	D	1	5	19	[38]	25	12		1458
	F	1	2	9	18	[56]	14		1572
	W	18	13	9	10	22	[28]		2900
	Other	12	7	11	3	60	7		1176
	Total Percent Classified Correctly							47	

Source: Student Record File

predicted to be W-type students than are students who make A's--and low grades are more closely associated with withdrawals than are high grades.

Looking at those students who withdrew, 28% were correctly predicted by the equation. This prediction rate is lower than that for any other group, and indicates that it is more difficult to determine who is likely to withdraw than to predict a grade of A through F. Moreover, most of the actual W's who were not predicted to withdraw were predicted to receive either an A (18%) or an F (22%). Students who withdraw tend to be at the extremes of academic performance and demographic background.

Two apparently inconsistent findings need interpretation. Students who make F's are more likely to be W-type students than are students who make A's. On the other hand, of those students who actually receive W's, a significant proportion were predicted to receive A's. In other words, there is a higher proportion of A-type students in the group receiving W's than there are W-type students in the group receiving A's. This suggests that some A-type students maintain their academic status by dropping courses, and in general, that withdrawing from a course is a mechanism for avoiding a relatively unsuccessful grade. A-type students may use withdrawals to avoid making a lower grade than A, as F-type students use withdrawal to avoid making F's.

A separate discriminant analysis was computed for each interaction group. A pattern was found similar to that in the equation for the total population. For each interaction group, as in the total, over 70% of the students who received an A were predicted by the equations to be A-type students, and over 50% of the students who made F's were predicted to be F-type students. A major difference between interaction groups was observed in the case of students who actually received W's. The WF group (22%), and to a lesser extent

the WM group (17%), both showed a higher proportion of A-type students withdrawing than did BF (8%) and BM (9%) groups. Some groups appear to be more sensitive to making lower grades than others.

For students who received a grade of D, the discriminant analysis shows a subtle difference between interaction groups. This difference suggests a psychological effect that would require further study.

Students who did not fall into the grade groups of A - F, W were aggregated under the label "other." They received such grades as incomplete, audit, satisfactory and unsatisfactory. The great majority of students falling into this category were predicted to be F-type students (60%), based on the discriminant equation. This is particularly true for the WM group (64%) and least true for the BF group (49%).

Multiple Regression Analysis

Withdrawals

As shown in Table 2, two sets of multiple regression equations were developed. (For the technical explanation see Appendix A.) The development of these two sets of equations allows a comparison of the effect the independent variables have on grades versus the effect they have on withdrawals.

GPA. The multiple regression equations developed from the withdrawal data are consistent with previous research that has found higher student GPA's associated with lower rates of withdrawal. Students whose rate of quarterly enrollment was high did not withdraw from courses as often as students who "stopped out" for longer periods of time.

Course Context. Courses with higher average grades have lower levels of withdrawal, and students are 2% less likely to withdraw from upper division courses than they are to withdraw from lower division ones. Another

Table 2

Multiple Regression Coefficients for Course Grades and Class Withdrawal Status, Spring Quarter 1981

Variable	Withdrawal					Grades				
	BF	BM	WF	WM	Total	BF	BM	WF	WM	Total
Academic Status										
GPA	-.02	-.005	-.05	-.05	-.05	.47	.47	.64	.60	.59
Rate Attnd.	-.02	-.02	-.005	-.01	-.00[illegible]	-.01	-.03	-.003	-.02	-.007
Hrs. Earned	-.0002	-.0002	-.0003	-.0005	-.0004	.0003	-.00006	.0002	.0003	.0001
Began GSU	.04	.12	.02	.06	.04	.06	.18	-.04	.06	.01
Transferred	.06	.11	.04	.09	.06	-.03	.12	-.09	.03	-.02
Demographics										
Age	.0004	.001	.002	.003	.002	.002	-.001	.003	.002	.004
Veteran Bnft.	.03	-.11	-.04	-.05	-.06	.09	.05		-.009	-.03
Financial Aid	.05	.03	-.01	.01	-.001	-.02	.07	-.03	.003	-.03
Foreign Status	-.04	.06	-.02	-.02	-.05	-.03	.02	.09	.09	-.02
Contextual										
Avg. Grade	-.05	-.04	-.04	-.03	-.04	.65	.66	.71	.60	.66
Avg. GPA	.06	.04	.06	.05		-.41	-.45	-.59	-.59	-.56
Class Size	-.002	-.002	-.001	-.001	-.0001	-.0001	-.002	-.0004	.003	-.001
Upper Div.	-.02	-.03	-.03	-.01	-.02	-.05	-.05	.02	-.03	-.01
Course Type										
Accounting	.07	.05	.03	.05	.05	-.12		-.04	-.06	-.03
Biology	.05	-.10	.02	.03	.01	-.24	-.11	-.16	-.07	-.16
Decision Math	.03	-.02	.02	.08	.04	-.03	.01		.02	.03
Economics	.06	.02	.06	.02	.04	-.07	-.08	-.08	-.08	-.06
English	.007	.01	.01	.06	.03	.11	-.03	.06	-.08	.02
Finance	.22	.03	.10	.13	.12	-.31	-.16	-.14	-.07	.03
History	.01	.05	.08	.04	.05		-.05	.05	.10	.05
Information Sys.	.10	.05	.08	.09	.08	-.07	-.01	.18	.09	.09
Legal Studies	.08	-.11	.03	-.003	.006	-.30	.05	-.07	-.12	-.13
Mathematics	.09	.16	.05	.08	.08	-.03	-.16	.17	-.02	.03
Management	.007	-.08	.02	.01	.02	.03	.08	-.04	-.09	-.04
Marketing	.06			.02	.02	-.14	-.09	-.09	-.04	-.09
Philosophy	-.07	-.15	-.02	.02	.03		-.21	-.02	-.04	-.06
Political Sci.	.06	-.03	.04	.04	-.01	.08	-.10	-.09	.03	-.07
Psychology	.02	-.07	.004	.03	.007	-.03	-.07	.02	-.04	-.01
Sociology	.03			.03	.01	-.14	.10	-.07	-.02	-.06
Constant	.26	.29	.21	.25	.22	.88	1.06	.83	1.36	1.02
Adjusted R^2	.08	.12	.05	.09	.07	.32	.33	.44	.36	.40
N	3228	1675	10717	9567	26806	2245	1426	9767	8391	23906

Source: Student Record File

contextual variable, the average GPA of all students in the class, shows an interesting relationship to the withdrawal rate. As the average GPA in the class increases, the withdrawal rate increases.

Course Type. A student in a Finance course is 12% more likely to withdraw. Students in Information Systems or Mathematics are 8% more likely to withdraw, and students in Accounting and History are 5% more likely.

Demographic Variables. Age has a minor effect on the withdrawal rate. An increase of five years in age increases the withdrawal rate by 1%. In general, students receiving veterans' benefits are 6% less likely to withdraw. However, for the BM group receiving veterans' benefits, the probability of not withdrawing increases to 11%, while the BF group receiving veterans' benefits are 3% more likely to withdraw. Students receiving financial aid and foreign students are less likely to withdraw from a course.

Grades

GPA. Using numeric grade as the dependent variable, the second set of multiple regressions is also presented in Table 2. As could be anticipated, the student's GPA is a strong indicator of the grade received in the course. In addition, the impact of GPA is much heavier in the grade equations than in the withdrawal equations.

Course Context. Two of the contextual variables had a strong impact on course grade. One, the average grade variable is a measure of the difficulty of the course. More difficult courses have lower average grades. Controlling for course grade, it was found that a second contextual variable--average GPA of all students in the class--had a strong negative impact on course grade. That is, controlling for course difficulty, the grade a student received in a

course decreased as the overall GPA of the class increased. This unexpected finding was subsequently verified by a detailed inspection of the data.

Course Type. Information Systems grades tend to be higher, while Biology, Legal Studies and Marketing tend to have lower grades. This does not necessarily mean that Biology is harder than Information Systems, but rather, controlling for student ability as measured by GPA, and controlling for course difficulty as measured by average class grade, students in Information Systems courses receive higher grades than students in Biology.

The interaction groups generally have patterns similar to the total group. However, there are some specific differences. The BF and BM groups have lower weights for GPA, indicating that past performance is a less important factor. For the BM group, age is mildly negative, reversing the trend of better grades with increasing age seen in the total and in the other groups. Veterans' benefits and financial aid have a positive effect on grades for the BM group, and veterans' benefits have a positive effect for the BF group. The course-type variables for the interaction groups have some interesting differences. For example, Finance, which has a positive coefficient for the total, has a negative coefficient for each interaction group and is strongly negative for the BF, BM, and WF groups.

The adjusted R^2 for the grade analysis equation is .40, indicating that 40% of the variance in grades can be explained by these factors. The highest R^2 at .44 is for the WF group and the lowest of .32 is for the BF group.

Demographic Variables. Age has a mild positive effect on course grade--a five-year increase in age produces a 2% increase in grade. Students receiving veterans' benefits make slightly lower grades, as do students receiving financial aid and foreign students.

Days in Course Before Withdrawal

Table 3 presents the findings from a multiple regression analysis for students who had withdrawn from their courses. "Calendar days in course" is the dependent variable. The generally low regression coefficients indicate the equation's weak predictive ability. Factors outside the independent variables considered are important in determining how long a student remains in a course before withdrawing. In addition, the low R^2 indicates that the findings should be interpreted with caution. The BM group has the largest adjusted R^2 at .09.

Consistent with previous research, students who have more experience as academic achievers are more likely to use withdrawing as an adaptive or coping mechanism. Students with higher GPA's stay in class fewer days before withdrawing. Also, older students and students who have earned more hours tend to withdraw earlier. These students seem to use withdrawals to maintain their academic status.

Other variables show that some groups withdraw later in the quarter than others, and that students receiving financial aid tend to remain in class longer. The contextual variable, average GPA of the class, shows that students in high average GPA classes tend to withdraw later. Other contextual variables show that students stay longer in upper division classes and larger classes. The course variables indicate a tendency to withdraw earlier from Accounting, Decision Mathematics, Economics, Finance, History, and Marketing, and to withdraw later from Biology and Mathematics.

Summary

This study has investigated course withdrawals and grades for undergraduate classwork. Some of the diverse factors that impinge upon course

Table 3

Multiple Regression Coefficients for Days in Courses Before Withdrawal, Using Academic Status, Demographic Background, Contextual Factors, and Course Types

(Expressed in Percentages)
Spring Quarter 1981

Variable	Total	BF	BM	WF	WM
Academic Status					
GPA	-1.12	.24	-.57	-.97	-1.31
Rate Attnd.	.04	.25	-.23	.05	-.11
Hrs. Earned	-.02	-.04	-.05	-.007	-.02
Began GSU	1.47	4.92	4.31	-.38	.69
Transferred	1.80	5.26	7.64	-.31	.80
Demographics					
Age	-.04	-.11	.08	-.07	-.17
Veteran Bnft.	.18	-5.88	-5.18	3.49	3.68
Financial Aid	2.29	.56	4.93	2.39	.80
Foreign Status	-1.29	-8.40	10.14	-3.93	-1.67
Contextual					
Avg. Grade	-.90		-3.49	-.80	-1.06
Avg. GPA	2.65	-.85	6.01	2.90	5.52
Class Size	.06	.05	.09	.07	.07
Upper Div.	1.70	-1.01	7.86	1.39	.98
Course Type					
Accounting	-1.70	-3.48	-9.48	-3.90	1.33
Biology	1.95	8.53	-11.63	.62	.52
Decision Math	-3.67	-5.17	-1.85	-4.32	-1.96
Economics	-1.44	-4.22	-1.56	-1.61	.67
English	.11	.61	-.42	.65	.46
Finance	-3.03	-1.06	-15.56	.69	-2.40
History	-1.01	1.27	-7.53		
Information Sys.	.57	1.10	-2.79	.43	2.47
Legal Studies	1.22	-3.36		5.51	1.45
Mathematics	1.62	4.63	-4.59	.74	3.04
Management	-.65		-1.41	4.47	-1.20
Marketing	-1.54	11.33	-20.66	-10.29	1.00
Philosophy	-.70			-2.40	3.90
Political Sci.	.28	-1.63	-7.55		4.73
Psychology	-.45	-3.38	-13.37	1.92	
Sociology	-2.66	-2.04	-2.85	-1.81	-2.21
Constant	22.61	28.86	17.13	22.25	20.94
Adjusted R^2	.02	.04	.09	.02	.03
R^2	.03	.10	.19	.05	.06
N	2900	383	249	950	

Source: Student Record File

performance and course withdrawals are studied. The diversity of these factors reflects the diversity of the modern urban university. Course withdrawal is viewed as a possible way for students to cope with their college experience. The W is an alternative to the traditional A - F grades for students. Using all undergraduate students for spring quarter 1981, multivariate analyses were done upon grades and class withdrawals. The predictor variables include academic performance, demographic background, course contextual effects, and course type.

The study found that past academic performance (GPA), course contextual variables such as the overall ability of the class, and the discipline of the course are the most significant factors affecting withdrawal and academic performance. Students with higher GPA's withdraw less, make better grades, but may also use withdrawal as a mechanism to maintain academic status. Classes where students with higher ability predominate have lower grades than classes with students of mixed ability. Disciplines such as finance, information systems and mathematics generate more withdrawals. In general, these factors have a similar impact across lines of race and gender.

Additional key findings are:

* Those students who receive A's are overwhelmingly predicted by their prior record to receive A's; a similar finding exists for those receiving F's.

* Those students who receive W's are often predicted to receive F's or, surprisingly, A's.

* Students with higher GPA's and higher rates of attendance are less likely to withdraw from a course.

* Older students are more likely to withdraw.

* The higher the average grade is in a given classroom, the lower the likelihood of withdrawal.

* Foreign students and students receiving veterans' benefits withdraw less frequently.

* Of students who withdraw, those with higher GPA's tend to remain in a course fewer days.

Implications

The motivation for this study was the need to determine if there are factors which could be adjusted by the university so as to create a higher level of educational effectiveness. There are several implications that can be tendered here:

1. A wide range of students use the W as an alternative to A - F grades. Many students use the W to avoid making a grade less than one that they expect, given their ability. These withdrawals might be minimized if these students knew more about the specific course requirements and personalities and styles of the instructors before enrolling.

2. The analysis suggests that the grade of D can be visualized as a ledge overlooking the abyss of failure. Some teachers might award more D's to failing students they perceive to be more emotionally sensitive to their grades and consequently more likely to make demands upon the teachers.

Alternatively, given the research that indicates that most teachers grade on a relative scale, the teacher's expectations of a normal distribution of ability is reflected in the grades assigned.

3. An explanation for the finding that classes of students with higher average GPA's tend to have lower grades is not immediately apparent. An interpretation could be that the sharpness of the competition among students of similar ability tends to lower the grade received in the class.

4. While there are some differences in the patterns by gender and race in grades and withdrawals, overwhelmingly the patterns are similar.

5. Past academic performance is by far the key indicator of student grades, though the individual course and instructor have a mild bearing on the grade of the student.

6. It is clear from the analyses that there are certain types of courses in the institution which grade stringently. These courses have high frequencies of withdrawals.

References

Bandura, A. Self-efficacy: Toward a unifying theory of behavior change. Psychological Review, 1977, 84, 191-215.

Brickman, P. L., McCariens, A. G., & Linsenmeir, J. A. Performance enhancement by relevant success and irrelevant failure. Journal of Personality and Social Psychology, 1976, 33, 149-160.

Feather, N. T. The effect of differential failure on expectation of success, reported anxiety and response uncertainty. Psychological Bulletin, 1963, 31, 289-311.

Feather, N. T. Effects of prior success and failure on expectations of success and subsequent performance. Journal of Personality and Social Psychology, 1966, 3, 287-298.

Feather, N. T., & Saville, M. R. Effects of amount of prior success and failure on expectations of success and subsequent task performance. Journal of Personality and Social Psychology, 1967, 5, 226-232.

Prather, J. E., & Smith, G. Factors influencing student performance on a language skills examination: The Regents' test (Report No. 76-1). Atlanta: Georgia State University, Office of Institutional Planning, July, 1975.

Reed, J. G. Dropping a college course: Factors influencing students' withdrawal decisions. Journal of Educational Psychology, 1981, 73(3), 376-385.

Rownd, C., Bolton, B., and Marr, J. Persistence versus withdrawal from the college classroom: A test of four theoretically derived propositions. Research in Higher Education, 1981, 14(3), 201-210.

Footnotes

[1] Graduate students are generally less likely to withdraw from a course than are undergraduates (see 81-22, p. 15), and are not discussed.

[2] Previous research on course withdrawal indicates that students tend to drop courses outside of their major field more frequently than within (Feather, 1963; Brickman, McCariens, & Linsenmeir, 1976; Bandura, 1977). This report will not treat the question of major field; rather this key question will be addressed in a separate report, given its fundamental importance.

Appendix

Multivariate Methods

Multiple Discriminant Analysis. This method creates a prediction equation based on the values of the independent values most often associated with the different groups being analyzed. In this particular analysis, the groups are grades A through F, and W. The analysis then compares the group in which a given case was predicted to be placed with the actual group of which the case is a member. As the predictive accuracy of the equation increases, the ability to differentiate between groups based on the independent variables also increases.

Multiple Regression. The first set of multiple regression equations uses the dichotomous dependent variable of whether or not a student withdrew from a course. Those students who withdrew from their courses recieved a "1" for this variable, while those students who did not withdraw received an "0." The second set of equations is the numerical value of the grade received, (A - F = 0 - 4), as the dependent variable and excludes W's from the analysis.